

III. Observations of the Second Comet of Mauvais, made at the Royal Observatory, Cape of Good Hope, under the direction of T. Maclear, Esq. Communicated by the Astronomer-Royal.

Day of Observa- tion.	Star of Comparison.	Cape Mean Time for R.A.	Diff. R.A. of Comet and Star.	No. of Obs.	Cape Mean Time for Declination.	Diff. of Decl. of Comet and Star.	No. of Obs.
1844.		h m s	m s		h m s	' "	
Oct. 27	* (1)	15 55 8.3	+3 9.56	2	15 55 8.3	-13 44.8	2
28	* (2)	15 51 11.5	-0 40.64	12	16 5 37.1	-18 19.9	3
29	* (3)	15 55 41.4	+0 34.28	18	15 48 5.2	-8 50.1	5
					16 3 51.0	-8 27.2	5
30	* (3)	16 3 53.4	-0 42.56	10	15 47 2.5	+28 39.7	8
					16 15 15.1	+29 26.0	4
31	* (4)	15 53 15.2	-2 20.31	7	15 50 28.6	-11 39.5	10
Nov. 1	A.S.C. 1457	15 26 30.4	+2 9.44	6	15 24 28.2	-23 22.6	5
	* (6)	16 5 36.7	-0 53.59	7	16 5 36.7	-5 15.6	7
2	A.S.C. 1457	15 24 17.5	+0 47.77	5	15 10 35.3	+15 52.4	5
		15 54 26.5	+0 46.33	6	15 42 51.4	+16 43.9	5
	* (7)	16 13 33.5	-2 23.63	5	16 13 33.5	-17 19.0	5
3	* (8)	15 17 11.4	-4 6.96	5	15 17 11.4	+9 42.7	5
	* (9)	16 3 11.9	-0 29.21	16	16 3 11.9	-19 25.4	16
4	* (10)	15 31 37.0	+0 32.50	14	15 31 37.0	-2 10.9	14
8	* (11)	15 45 27.1	-1 47.85	16	15 45 27.1	-0 11.5	16
9	* (12)	15 3 12.8	+0 47.80	7	15 3 12.5	-28 4.9	7
10	* (12)	14 59 4.5	-0 56.22	10	14 59 4.5	+17 53.4	10
		15 45 49.6	-0 59.90	12	15 45 49.6	+19 23.8	12

The sign + denotes the comet's right ascension and declination to be greater than the star's; the sign - the contrary.

The above observations, with the exception of those on October 28 and 29, were made with a spider-line position micrometer applied to Dollond's achromatic telescope of 46 inches focal length; the power employed was 43. On October 28 and 29 a different micrometer was used, the comet not being visible in an illuminated field. This micrometer was made by removing the cross-wires from the micrometer eye-piece of the mural circle microscope and substituting three pieces of watch-spring, each about 12" in width, permanently fixed parallel to each other, and at about 20s apart; and another piece at right angles to the former, moveable by means of the micrometer screw. The differences in right ascension were determined from the transits over the three parallel bars; and the differences in declination measured by means of the moveable one: both objects being bisected by the edges of the bar.

The observations are not corrected for the effects of refraction and parallax.

The comet was first seen on October 27: it was then discovered without difficulty soon after it rose. It appeared as a faint nebulous patch of light, nearly circular, about 1' in diameter, and with a condensation of light near its centre. On November 3 it was a fine nebulous mass of light; the outline seemed to be of a parabolic figure, with a condensation of light in its focus. A faint trace of a tail was seen, about 4' in length: its direction being *apparently* towards the sun. On November 8, a distinct nucleus, about as bright as a star of the ninth magnitude, was visible in the brightest part of the head. The length of the tail was about 9', its light being very faint.

The comet is now (Nov. 10) visible to the naked eye.

The following Table contains the approximate places of the stars of comparison, determined by means of the setting circles of the telescope :—

Star.	Mag.	Approximate Right Ascension.	Approximate Declination.	Remarks.
* (1)	9	^h 12 ^m 34 ^s 50	—23° 2'	This is the same as No. 6728 of the Madras Catalogue.
* (2)	8	12 37 37	23 42	
* (3)	7	12 34 57	24 9	
* (4)	7	12 35 10	25 29	
* (6)	8	12 32 30	25 59	
* (7)	7	12 32 38	26 52	
* (8)	7	12 32 54	27 4	
* (9)	8	12 29 15	27 33	
* (10)	8·9	12 26 34	28 0	
* (11)	7	12 22 44	30 45	
* (12)	6	12 18 42	—31 56	This is the same as No. 6608 of the Madras Catalogue.

A star of the 8·9 magnitude follows * (10) about 30^s, and is north of it about 8'; another star of the 9th magnitude follows * (10) about 1^m 50^s, and is about 4' to the south of it.

The observations were made by Mr. Mann.